AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-134 (Canceled)

135. (Currently Amended) A home video game system, for use with a television type monitor display device, comprising:

a game program processing unit for executing at least a portion of a videographics program that includes instructions for drawing one or more ~~trapezoids~~ polygons for constructing and displaying 3D graphic objects;

a video RAM for providing video frame data to a display device; and

a programmable special purpose hardware graphics processor unit connected to the game program processing unit for receiving information relating to one or more ~~trapezoids~~ polygons for constructing and displaying 3D graphic objects, the special purpose hardware graphics processor programmed to process pixel data for subsequent transfer to said video RAM corresponding to one or more portions of ~~trapezoids for constructing~~ polygon-based 3D objects to be displayed, wherein said special purpose hardware graphics processor unit performs a 3x3 matrix transformation of x, y and z graphics data points to provide rotated and/or scaled polygon-based 3D objects at high speed.

136. (Previously Presented) A home video game system as in claim 135 wherein the graphics processor is a coprocessor that is responsive to specific instructions used for rendering 3D objects.

137. (Previously Presented) A home video game system as in claim 135 wherein the graphics processor is a pipelined processor.

138. (Previously Presented) A home video game system as in claim 135 wherein the transfer of pixel data to video RAM is a direct memory access (DMA) type transfer.

139. (Previously Presented) A home video game system as in claim 135 wherein the graphics processor includes a high speed multiplier circuit.

140. (Previously Presented) A home video game system as in claim 135 wherein the graphics processor includes embedded RAM cache memory.

141. (Canceled)

142. (Previously Presented) A home video game system as in claim 135 wherein the graphics processor includes at least an Arithmetic Logic Unit and a multiplier circuit for performing computations for rotation and/or scaling of a graphic object to be displayed.

143. (Previously Presented) A home video game system as set forth in claim 142 wherein the multiplier performs multiply operations using at least 16-bit length operands.

144. (Currently Amended) A home video game system as in claim 135 wherein the graphics processor is programmed to rotate an array of x, y and z data points corresponding to ~~trapezoid~~ polygon vertex points.

145. (Currently Amended) A home video game system as in claim 135 wherein two or more ~~trapezoid based~~ 3D graphic objects are displayed simultaneously.

146. (Previously Presented) A home video game system as in claim 135 wherein the graphics processor is programmed to perform texture mapping operations.

147. (Previously Presented) A home video game system as in claim 135 wherein the graphics processor includes a pixel plotting circuit for converting display screen pixel coordinate addresses to a character map address format.

148. (Previously Presented) A home video game system as in claim 135 having a set of instructions for programming the graphics processor unit for rendering 3D graphic objects wherein the instruction set includes an instruction for controlling transparency of a displayed object.

149. (Currently Amended) A home video game system as in claim 135 having a set of instructions for programming the graphics processor unit wherein the instruction set includes a fractional signed multiply instruction for computing gradients and/or slopes for rotating ~~trapezoid-based~~ displayed 3D graphic objects.

150. (Previously Presented) A home video game system as in claim 135 wherein the graphics processor incorporates at least an Arithmetic Logic Unit and cache RAM fabricated on a single chip.

151. (Previously Presented) A home video game system as in claim 135 wherein the graphics processor incorporates at least an Arithmetic Logic Unit and a high speed multiplier circuit fabricated on a single chip.

152. (Previously Presented) A home video game system as in claim 135 wherein the graphics processor comprises an Arithmetic Logic Unit, a multiplier unit and plurality of registers fabricated on a single chip.

153. (Previously Presented) A home video game system as in claim 135 further comprising a CD ROM reader device wherein at least a portion of program instructions and/or graphics data is accessed from a CD ROM.

Claims 154-185 (canceled)

186. (Currently Amended) In a home video game system for use with a television type monitor, said home video game system including a game program processor for executing at least a portion of a video graphics program that includes instructions for ~~drawing one or more trapezoids for~~ constructing and displaying polygon-based 3D objects, a programmable special purpose hardware graphics processor and a video RAM for providing video frame data to a television type monitor display device, a method for performing operations for rotation and/or scaling of polygon-based 3D graphic objects to be displayed on the display device, comprising the steps of:

executing instructions ~~for drawing one or more trapezoids~~ for constructing and displaying 3D graphic objects;

providing instructions to said graphics processor for performing a 3x3 matrix transformation of x, y and z graphics data to compute rotated and/or scaled 3D coordinate polygon vertex position information for a 3D graphic object at high speed;

computing display screen position coordinates for a rotated and/or scaled ~~trapezoid-based~~ 3D graphic object; and

writing pixel color information corresponding to the rotated and/or scaled ~~trapezoid-based~~ 3D graphic object to the video RAM.

187. (Currently Amended) A home video game system for use with a television type monitor display device, comprising:

a ~~separate~~ game program processor;

a separate special purpose hardware graphics processor for ~~rendering at least one or more trapezoids for~~ constructing one or more portions of a 3D graphic object for displaying on the

display device, wherein said special purpose hardware graphics processor performs one or more matrix transformations of x, y and z graphics coordinate data to provide rotated and scaled polygon-based 3D objects at high speed; and

a CD ROM reader device, wherein at least a portion of program instructions and/or graphics data used in rendering a trapezoid-based 3D graphic object is accessed from a CD ROM.

188. (Currently Amended) A home video game system as in claim 187 wherein the graphics processor is a coprocessor that is responsive to specific instructions used for rendering ~~trapezoids for use in constructing~~ 3D objects.

189. (Previously Presented) A home video game system as in claim 187 wherein the graphics processor is a pipelined processor.

190. (Previously Presented) A home video game system as in claim 187 wherein the graphics processor includes a high speed multiplier circuit.

191. (Previously Presented) A home video game system as in claim 187 wherein the graphics processor includes a plurality of data storage registers.

192. (Canceled)

193. (Canceled)

194. (Canceled)

195. (Currently Amended) A home video game system as in claim 187 wherein the ~~graphics processor is programmed to rotate an array of X, Y and Z coordinate data corresponding~~ x, y and z coordinate data correspond to vertex points of a ~~trapezoid-based~~ polygon-based 3D graphics object.

196. (Currently Amended) A home video game system as in claim 187 wherein two or more ~~trapezoid-based~~ 3D graphic objects are displayed simultaneously.

197. (Previously Presented) A home video game system as in claim 187 wherein the graphics processor is programmed to perform texture mapping operations.

198. (Previously Presented) A home video game system as in claim 187 wherein the graphics processor includes a pixel plotting circuit for converting display screen pixel coordinate addresses to a character map address format.

199. (Previously Presented) A home video game system as in claim 187 having a set of instructions for programming the graphics processor unit for rendering 3D objects wherein the instruction set includes an instruction for controlling transparency of a displayed object.

200. (Currently Amended) A home video game system as in claim 187 having a set of instructions for programming the graphics processor unit wherein the instruction set includes a

fractional signed multiply instruction for computing gradients and/or slopes for rotating ~~trapezoid-based~~ polygon-based displayed objects.

201. (Previously Presented) A home video game system as in claim 187 wherein the graphics processor incorporates at least an Arithmetic Logic Unit and cache RAM fabricated on a single chip.

Claims 202 -203 (Canceled)

204. (Currently Amended) In a home video game system used with a television type monitor, the game system having a game program processor and a programmable special purpose hardware graphics processor, the graphics processor having circuitry including a plurality of storage registers for increasing computational speed when processing ~~3D graphic geometric~~ x, y and z graphic data matrix transformation operations, a method of producing 3D type graphics display effects utilizing rotated ~~trapezoid-based~~ polygon-based objects, comprising the steps of:

executing instructions for drawing one or more ~~trapezoids~~ polygons for constructing and displaying ~~trapezoid-based~~ polygon-based objects;

using a plurality of storage registers of the special purpose hardware graphics processor as a rotation matrix for computing ~~rotated coordinator of~~ 3x3 matrix transformations of x, y and z graphic data corresponding to one or more vertices of ~~trapezoid-based~~ polygon-based graphic objects;

providing said graphics processor with ~~X, Y and Z~~ x, y and z graphic data vertex coordinate information relating at least in part to a ~~trapezoid-based~~ polygon-based 3D graphic object;

computing new ~~X, Y and Z~~ x, y and z graphic data coordinate values corresponding to a rotated 3D graphic object using said rotation matrix; and

writing pixel color information corresponding to the rotated ~~trapezoid-based~~ polygon-based 3D object into a video display RAM.

205. (Previously Presented) The method as in claim 204 wherein the writing of pixel information is accomplished via a DMA operation.

Claims 206-223 (canceled)